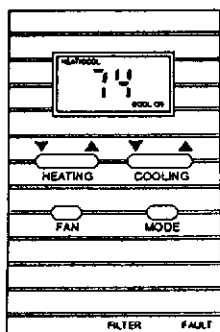


## MODEL DSP-700

### OPERATING INSTRUCTIONS



SEE OTHER SIDE FOR  
INSTALLATION INSTRUCTIONS

### OPERATING INSTRUCTIONS FOR MODEL DSP-700

Your new Digital Setpoint Thermostat has been designed to provide accurate control and display of room temperature. In addition it will also display all relevant information pertaining to your heating and cooling system.

The clearly marked buttons and informative display make it extremely easy to understand and simple to use.

Please take a few moments to read the brief instructions and familiarize yourself with the various functions in order to obtain maximum benefit from this truly unique electronic control.

### GENERAL INFORMATION

The thermostat normally displays room temperature, mode of operation and which system is currently on. The four buttons on the front of the unit allow complete control of your heating and cooling system.

You may select different heating and cooling setpoints for the systems to maintain eg. 70° in heating and 75° in cooling. Raising or lowering the setpoints in heating or cooling is as simple as pushing a button. In addition you may choose ° F or ° C for the display.

The thermostat also allows you to select continuous fan operation, (useful when using an air cleaner) or have the fan come on with the equipment.

#### INDICATOR LIGHTS

The Yellow and Red indication lights are both "free" lights. They may be used to indicate dirty filter, compressor fault etc.

### USER CONTROLS

**MODE:**  
Select the desired mode of operation by repeated pressing of the MODE button:  
COOL- controls Cooling system only  
HEAT- controls Heating system only  
HEAT/COOL- controls both systems  
OFF- systems will not operate

**COOLING:**  
Select the temperature you want your Cooling system to maintain by pressing and holding the COOLING button under the ▼ or ▲ until the desired temperature is displayed. When the display shows SET TEMP and COOL the temperature shown is the control temperature for your Cooling system. The display will show COOL ON when the system is operating. STAGE 2 will be displayed when 2nd stage Cooling is energized.

**HEATING:**  
Select the temperature you want your Heating system to maintain by pressing and holding the HEATING button under the ▼ or ▲ until the desired temperature

#### USER CONTROLS (continued)

is displayed. When the display shows SET TEMP and HEAT the temperature shown is the control temperature for your Heating system. The display will show HEAT ON when the system is operating. STAGE 2 will be displayed when 2nd stage Heating is energized.

**FAN:**  
The Fan will come on automatically when the systems are operating but there is no indication of this on the display. To select continuous Fan operation, press the FAN button and the display will show FAN ON. This is recommended for electronic air cleaners and continuous ventilation requirements.

**OFF:**  
When the word OFF is displayed the Heating and Cooling systems will not operate. Display shows room temperature and FAN is operable.

*Avoid using the OFF mode during extremely cold weather to prevent damage from freezing.*

#### HEAT/COOL:

Selecting this mode of operation will control both your Heating and Cooling systems. The thermostat will automatically switch from one to the other as determined by the selected temperatures in heating and cooling.

#### NOTE

The thermostat always maintains a minimum 2° F (1° C) difference between the heating and cooling setpoints.

#### SET TEMP:

This is displayed when pressing the HEATING or COOLING button under the ▼ or ▲ symbols.

The number that is displayed when the button is released is the new setpoint or control temperature for the appropriate system. The display will then return to showing it's normal readout of room temperature.

#### POWER FAILURES

Your thermostat employs the latest developments in solid state electronic technology. The innovative use of this technology has enabled us to provide features never before possible in an electronic thermostat.

One of the unique features of your thermostat is that there is no battery required to maintain your selected setpoints in the event of a power loss as the memory is unaffected by power failures of any duration.

When power is restored the thermostat will continue operating as if the power had never been off.

#### WARRANTY

##### LIMITED TWO YEAR WARRANTY.

Enerstat warrants to the original purchaser that it's Enerstat and component parts will be free from defects in workmanship and materials for a period of two years from date of purchase. Your dealer will provide free replacement of your Enerstat upon proof of purchase.

##### EXCLUSIONS

This warranty does not apply in the event of misuse, abuse or as a result of unauthorized alterations or repairs. Enerstat will not be liable for any consequential damages including without limitation, damages resulting from defects, loss of use, or misuse.

This equipment, if installed in strict accordance with the manufacturers instructions, complies with the limits for a Class B computing device pursuant to Subpart J of Part 15 of FCC rules.

## INSTALLATION INSTRUCTIONS

### LOCATION:

To ensure proper operation, the thermostat should be mounted on an inside wall in a frequently occupied area of the building. In addition, its position must be at least 18" (46cm) from any outside wall, and approximately 5' (1.5m) above the floor in a location with freely circulating air of an average temperature.

### BE SURE TO AVOID THE FOLLOWING LOCATIONS:

- behind doors or in corners where freely circulating air is unavailable
- where direct sunlight or radiant heat from appliances might affect control operation
- on an outside wall
- adjacent to, or in line with, conditioned air discharge grilles, stairwells, or outside doors
- where its operation may be affected by steam or water pipes or warm air stacks in an adjacent partition space, or by an unheated/uncooled area behind the thermostat
- where its operation will be affected by

the supply air of an adjacent unit  
 - near sources of electrical interference such as arcing relay contacts  
 You may wish to use a remote sensor if the most appropriate location for sensing temperature is not convenient or accessible. Request Enerstat part # RSK4 and use Belden type 8760 shielded cable or equivalent.

1) Remove the mounting plate from the back of the thermostat by grasping the plate firmly and pulling it straight out.

2) Position the plate on the wall so that it appears level and with the large rectangular hole near the bottom with the wires from the equipment protruding through the hole. Mark the location of the two mounting holes on the wall and drill holes using a 3/16" (5mm) bit. Install supplied anchors and secure plate to wall with supplied hardware. The thermostat may also be mounted on a vertical 2x4 junction box using field supplied hardware.

3) Connect the wires from your system

to the thermostat using one of the wiring diagrams below. The X terminal is required. Strip 1/4" (6mm) of insulation from control wires (longer strip lengths may short).

4 Carefully align the thermostat with the mounting plate ensuring that the surplus wire length is pushed into the wall cavity or junction box as the thermostat is pushed onto the mounting plate.

### SLIDE SWITCH SETTINGS

Switch	Position	Function
1	OFF	Keyboard locked
	ON	Keyboard functional
2	OFF	Remote sensor
	ON	Internal (local) sensor
3	OFF	3 cycles per hour
	ON	6 CPH (heat only)
4	OFF	Fan with Heat call
	ON	Fan with system

To change displayed temperature between °F and °C, depress the Heat ▲ and Cool ▼ buttons simultaneously.

**PUSHBUTTON:** Temperature Calibrator (located at bottom, rear of thermostat)  
 To calibrate, perform the following steps  
 - ensure 24Vac is present at terminals  
 - determine correct space temperature  
 - depress and hold 'Calibrate' button  
 - depress appropriate HEATING ▼ or ▲ button until correct space temperature is displayed

### OUTPUT TERMINAL FUNCTIONS

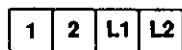
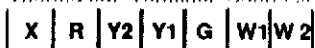
- X 24 Vac common side of transformer.
- R 24Vac from transformer.
- Y2 Second stage cooling.
- Y1 Cooling energized with cooling call.
- G Fan energized when FAN is 'on' or cooling equipment is operating.
- W1 Heat energized with heating call.
- W2 Second stage heating.
- 1 One wire from remote sensor.
- 2 Other wire from remote sensor and cable shield (do not ground shield).
- L1 Connect to 24Vac for Red light
- L2 Connect to 24Vac for Yellow light

## SPECIFICATIONS

- Rated Voltage 20-30 Vac, 24 nominal.
- Rated Current 0.01 to 3A continuous per output with surges to 5A. Maximum 3Amp continuous total output.
- Cycle Rate 3CPH (Y1, Y2) 3 or 6 CPH in heating (switch selectable).
- Control Range Heating 41-96F (5-34C) Cooling 43-98F (7-35C)
- Measurement Range 38 to 109F or 5 to 41C
- Accuracy ±1F at 68F, ±0.5C at 20C
- Minimum Deadband (between heating and cooling) 2F or 1C
- Minimum On /Off Times 4 minutes in cooling, 2 or 4 minutes in heating (selectable).

**NOTE:** This thermostat contains electronic circuitry replacing the conventional mechanical anticipator.

Thermostat Terminal Connections



### REMOTE SENSOR (OPTIONAL)

